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brother state officials, the judges; it starts at a stated minimum amount, and is increased by a stated percentage at stated periods until the maximum is reached; and after a few years of service he or his family is assured of a stated pension in case of his disability or death.

The details of all these regulations and conditions are given for both Germany and Austria, and in such a way as to make interesting reading at any point. Taken as a whole, the book presents by far the most complete and modern description of the secondary schools in these countries with reference to the status and duties of the secondary-school teachers. The first edition (1905) was eminently successful. This new and enlarged edition ranks even higher.

*Die Oberrealschule und die Schulreformfragen der Gegenwart.* Vortrag in der Festsitzung vom 10. Oktober, 1909, der Hauptversammlung des Vereins zur Förderung des lateinlosen höheren Schulwesens zu Kassel, gehalten von DR. ALEX. WERNICKE. Leipzig: Teubner, 1910. Pp. 40. M. 0.50.

In this address the writer first points out that in its original form the *Oberrealschule* was a technical school, and then discusses its character and function since it has become a school for general education by the substitution of instruction in the modern languages for classical studies. Of 297 cities in Prussia in which there is a complete (nine-year) secondary school, 191 have only the classical *Gymnasium*, with little or no opportunity for modern studies. Between 1898 and 1908 the number of Prussian *Oberrealschulen* increased from 28 to 75, and the number of *Realschulen* from 78 to 171. The graduates of these schools have taken high rank in the universities and the higher technical schools. The *Oberrealschule* meets actual needs now just as the *Gymnasium* met them in the past, when Latin was the language of law, theology, and general culture, and Greek the language of the world's wisdom.

JOHN FRANKLIN BROWN

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*Broad Lines in Science Teaching.* Edited by F. HODSON. New York: Macmillan, 1910. Pp. xxxvi+267.

This book includes an introduction by Professor M. E. Sadler and twenty-one distinct essays by twenty different authors. Professor Sadler, in his introduction, makes the following very broad and general statement:

"What the classical renaissance was to men of the fifteenth and sixteenth centuries, the scientific movement is to us. It has given a new trend to education. It has changed the outlook of the mind. It has given a new intellectual background to life. It has therefore disturbed the old balance of studies. It has broken down a scholastic monopoly. It has made a new learning indispensable to all professional callings. It demands a new spirit and a new method of teaching. Its claims affect the whole field of education and every grade of school. They involve a revolutionary change."

Each of the authors seems to be inspired with the same zeal for emphasizing the importance of science in educational work. They have directed their remarks chiefly to the science work in the secondary schools, but the

nature-study which precedes the high-school work and some of the science work of technical schools receives attention in certain of the essays. One essay is upon the planning of science laboratories. With one or two exceptions, the authors make clear, straightforward statements of high ideals in the teaching of science. They have especially emphasized the following points:

1. A good knowledge of the natural sciences is essential to a liberal education.
2. The teaching of science should begin with young children.
3. There is a necessity for direct and first-hand observation of nature by the students.
4. The more general introduction of biology should be especially encouraged.
5. The scientific method is wonderfully well adapted to the training of minds.
6. The scientific method may be adapted to all lines of investigation.
7. The scientific method may be adapted to instruction in the various subjects in the curriculum.
8. The knowledge acquired by the student in the science courses is not as important as the mental training received.
9. The science work should lead to intellectual independence.
10. A sympathetic study of the natural sciences will lead to a poetic appreciation of nature's wonderlands.
11. Good work in science will preserve and cultivate in the mind of the child a spirit of research.
12. The work in science should assist greatly in the solution of the problems of social hygiene.

The general spirit that pervades the entire book is especially commendable. The writers all seem to believe that it is the greatest function in education to bring about greater intellectual independence in the race. Each student is to learn to think for himself, and to develop ability to reserve judgment until sufficient facts are at hand to justify a decision. They appreciate that the acquisition of knowledge should not be put as high as the training in character.

In the preface the editor frankly admits that the essays are statements of ideals and that they do not describe conditions as they now exist in the schools. The ideals set forth are not new to those who have kept abreast of the advance in educational work in this country. Colonel Francis W. Parker urged these same ideals and the importance of science in the curriculum of a school during the last thirty years of his life, and Dr. John Dewey in his laboratory school worked toward just such ideals. Dr. Dewey has, I believe, made even stronger claims for science and the scientific method than any one of these authors. In his address before Section L, Education, of the American Association for the Advancement of Science, at Boston, 1909, Dr. Dewey stated:

"Scientific method is not just a method which it has been found profitable to pursue in this or that abstruse subject for purely technical reasons. It represents the only method of thinking that has proved fruitful in any subject—that is what we mean when we call it scientific. It is not a peculiar development of thinking for highly specialized ends; it is thinking, so far as thought has become conscious of its proper ends and of the equipment in-

dispensable for success in their pursuit. . . . When our schools truly become laboratories of knowledge-making, not mills fitted out with information-hoppers, there will no longer be need to discuss the place of science in education."<sup>1</sup> At another place in the same address Dr. Dewey said:

"One of the only two articles that remain in my creed of life is that the future of our civilization depends upon the widening spread and deepening hold of the scientific habit of mind; and that the problem of problems in our education is therefore to discover how to mature and make effective this scientific habit."

The authors in the volume under consideration are, with one or two exceptions, special students of science who have advanced far in their professions. With the exception of Professor C. R. Mann, of the University of Chicago, the writers are all connected with European institutions, most of them with the schools of England, and it is a source of encouragement to all educational workers that so excellent and enthusiastic a series of essays from such well-trained and experienced teachers has been published.

Science is playing a more and more important rôle in all educational work, and with each decade there will undoubtedly be a great increase in the number of enthusiastic supporters of this work. The present writers are to be ranked among the advanced thinkers along this line. We cannot assume that there is general acceptance or appreciation of their views, but this volume should assist in promoting a fuller and broader appreciation of the importance of science in education and of the many phases of this problem in the secondary schools.

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*The Tenth Yearbook of the National Society for the Study of Education.*

Part II, *The Rural School as a Community Center.* Edited by B. M. DAVIS. Chicago: The University of Chicago Press, 1911. Pp. 75. \$0.75.

The book is made up of reports by various specialists in rural education and community activity.

I. *The Rural School as a General Educational and Social Center.*

A. *Community Work in the Agricultural High School.* By B. H. CROCHERON.—The high school reported belongs to and is supported by the county, has a rural location, accommodates four elementary schools, serves every class of people in the community, and offers a course of study designed to meet the needs of the people served. The school advertises its special activities by letters, posters, and newspaper items; organizes teachers' meetings, lecture courses, corn congresses, women's clubs, and literary societies; and tests the farmers' milk and seeds. It "is an educational force for the whole family and a social, cultural, and ethical center for the entire community."

B. *The District Schools in a County as Educational and Social Centers.* By JESSIE FIELD.—"Country schools," says Miss Field, "must interest boys and girls in life on the farm and bring to them a vision of its great possibilities if rightly lived." The teacher should be a working member of community organiza-

<sup>1</sup> *Science*, N.S., Vol. XXXI, No. 787, p. 127.